



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,652	12/16/2003	Ko Chun-Shien	BHT-3091-64	3531

7590 07/16/2007
TROXELL LAW OFFICE PLLC
SUITE 1404
5205 LEESBURG PIKE
FALLS CHURCH, VA 22041

EXAMINER
PADGETT, MARIANNE L

ART UNIT	PAPER NUMBER
1762	

MAIL DATE	DELIVERY MODE
07/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/735,652

Applicant(s)

CHUN-SHIEN, KO

Examiner

Marianne L. Padgett

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS; WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1762

1. Claims 1 & 5-6 are objected to because of the following informalities: in claim 1, at the end of the limitations of "A. A first step...", "D. A fourth step...", "E. A fifth step...", "F. A sixth step...", "G. A seventh step..." the incorrect punctuation of colon, ":", is employed, where as these are a series or set of items or limitations the appropriate punctuation mark would be a semicolon, ";".

Non-idiomatic English is found throughout the claims, but attention is especially directed to limitations of the fifth & seventh steps where the use of the word "finishing" would appear to be making these steps part of the preceding step, hence not another step in themselves as labeled, thus appears to be a non-idiomatic use of the word. In claims 5 & 6, the phrasing "make a finished... tile provided with excellent property of anti-abrasion and anti-slipping" is non-idiomatic or uses an incorrect verb tense structure, plus has a disagreement between plural & singular of "property" & the two particularly listed species.

Appropriate correction is required.

2. Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 7 is incomplete, as it ends in the middle of the sentence & without a ".", with the phrase "wherein said heat dispersing device is a heat-dispersing", such that no further information is provided, thus not further limiting what the "heat dispersing device" may be. Given that claim 7 ends at the end of the line at the end of the page labeled 13, it appears that there is a missing page.

3. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1762

In claim 1, in "B. A second step", the limitation of "a set of spraying appliance" is of uncertain scope, because "set" would appear to require there to be plural items, however "appliance" is singular, thus making it unclear whether singular or plural spraying appliances are employed.

In "C. A third step..." it is unclear whether "by means of a spray appliance" is modifying the formation of a layer of aluminum oxide sand in the step, or referring back to the appliance used in the preceding step, due to the ambiguous phrasing which could refer to either the immediately preceding words of "the second step" or to the layer forming action in the earlier part of this phrase. It is noted that there is a slight differentiation between the "appliance" of second & third steps, in that the former is modified by "spraying", while the latter is modified by "spray", however it is further noted that claim 4 provides a further modifying limitation of "said spraying appliance is a sandblast machine", which would make the most sense applied to the "third step of forming a layer of aluminum oxide sand", but considering the exact form of the modifying word "spraying" would have to be considered to modify the "second step of coating a first layer of UV photo-curing resin". Alternately, claim 4 could merely be considered ambiguous, as being unclear which step it should be applied to or if it applies to both.

In claim 3, the phrase "said coating appliance is one possible to coat paint..." is non-idiomatic English phrasing, which may possibly be intended to mean "... is one able to coat paint... --", however this dependent claim has the further problem that it does not supply (given its probable meaning) any positive limitation to further limit the independent claim, such that it is not clear what this claim further necessitates. It is also noted that the capability of any particular appliance to apply paint, depends on the type of paint (not specified) and that paints come in an extraordinarily wide variety of types, inclusive of powdered materials, liquid materials, suspensions, dispersions, polymerizable materials, thermoplastic (i.e. meltable) materials, etc., such that this claimed capability does not even add much meaning.

In claim 5, the phrasing "wherein said two layers of UV photo-curing resin with the layer of aluminum oxide **said sandwiched** between said two layers of UV photo-curing resin" (emphasis added),

Art Unit: 1762

has non-idiomatic phrasing & contains language without antecedent basis as "sandwiched" is not a noun & has not been previously introduced. However, the examiner suspects that the "said" before "sandwiched" is a typographical error and should say -- sand --, and will be treated as such for the purposes of examination over the prior art.

It is also noted, that claim 7 ending in the middle of the phrase that appears to be intended to further define the "heat dispersing device" of the seventh step may be considered vague and indefinite, as it is unclear how this claim is intended to further limit the independent claim.

4. The disclosure is objected to because of the following informalities: proofreading of the specification is recommended, particularly for non-idiomatic English phrasing, such as employed in the claims, and for typographical errors such as found in the last line of page 8, "photo0curing".

Appropriate correction is required.

5. The drawings are objected to because figures at 1-5 as discussed on pages 5-6 are directed to conventional processing & products, hence should be labeled "conventional", or "prior art", or the like.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

Art Unit: 1762

notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller, Jr. et al. (4,689,259), in view of Carling (2003/0068447 A1) or Colton et al. (2001/0051230 A1) or Hansson et al. (WO 01/47726 A1).

Miller et al. (259) teach the production of vinyl floor tiles with decorative wear resistant surfaces, that includes coating the plastic base material with a UV curable adhesive material, thereafter cascading, flooding or sprinkling a mixture of sand particles, that may be aluminum oxide on the uncured adhesive (exemplary deposition is a printed pattern (screen printing, flexographic printing, etc.), but it is taught to possibly overall print the adhesive with an overall layer of particles deposited thereon). After removing excess, not adhered particles the adhesive is partially or completely cured with UV light that a top or where layer coating of UV curable material is roller coated thereon, followed by UV curing, such that all layers are completely cured. In Miller et al. (259) see the abstract; summary; col. 3, lines 10-47 & 65-68 especially lines 20, 30-35, 40-45 & 66; col. 5, lines 22-34 & 57-col. 6, lines 48, esp. col. 6, lines 4-13.

While the particle application techniques of Miller et al. (259) do not specifically state that the means of applying the particulate material (aluminum oxide or sand) is via a spraying apparatus, or specifically by use of a sandblasting machine (assuming it's even claimed for this step), the taught techniques described as cascades or flooding or sprinkles are all actions that can be considered to be affected by some sort of spraying technique, such that it would've been obvious to one of ordinary skill in the art to consider use of a spraying apparatus for application of the particles as taught, especially

Art Unit: 1762

considering that the background on col. 1, lines 15-25 teaches that spraying of vinyl floor tiles with carborundum grit (synonym of aluminum oxide sand) for making non-skid surfaces is known in the prior art, thus suggesting a known means of providing the taught action. It is further noted that the claimed use of a "sandblast machine" does not necessitate any particular parameters used therewith, such that any apparatus that might be used to spray inorganic particulate materials/grit/sand may be considered to read on a machine capable of being called a sandblast machine.

It is noted that is described on col. 6, lines 30-44, that the UV curable top coating (wear coat) material is roller coated under heated conditions with subsequent curing with conventional UV lights at 4.5 Joules UV energy, which will inherently also cause some heating, hence the product at this point is heated, thus while there is no disclosure directed towards cooling, this resultant product will inherently undergo cooling, which since no specific discussion thereon is included, one of ordinary skill in the art would have expected that the cooling is via dissipation of the residual heat remaining in the product after curing, such that any object capable of conducting or absorbing heat which contacts the UV cured flooring tiles may be considered to aid in cooling (as long as it's not heated), thus be called a "heat dispersing device".

The process of Miller et al. (259) particularly differs by not using "a set of spraying appliance" for deposition of the first UV curable coating, i.e. their UV curable adhesive, using instead printing apparatus of various sorts, where those mentioned are inclusive of roller mechanisms, but do not particularly mention spraying techniques, however the application of UV curable polymeric materials, such as the acrylated polyester adhesive of Miller et al. (259) are well known to be applicable via many deposition techniques, inclusive of generic spraying as shown by either Carling (447: abstract; [0018-19]; [0038-40], especially [0040]), who applies photocurable liquid polyurethane onto tiles, where different methods of application are equivalently taught including spraying & roller coating; or Colton et al. (230: abstract; figure 1; [0027]; [0029-42]) who teaches applying protective surfaces on substrate inclusive of

Art Unit: 1762

floor materials using radiation (UV) polymerizable coating materials to which grit or hard particles may be applied to the uncured coating for an antiskid surface, where it is taught that dependent on the viscosity of the coating material it may be brushed, rolled or sprayed onto the surfaces desired [0027], thus it would've been obvious to one of ordinary skill in the art, especially for Miller et al. (259)'s option of the initial layer of adhesive covering the whole surface, to apply the alternate coating means of spray deposition as as deposition techniques that employer means such as rollers or spray are seen to be equivalently employed for blanket coating, hence would have been expected to be equivalently applicable or effective, where coating of the entire surface, i.e. "overall print", is employed as is taught to be possible.

Alternately, Hansson et al. (abstract, figure, pages 9-10) shows that an alternative printing technique, used in depositing materials on substrates for wear resistant surfaces, is inkjet printing, which is desirable for the flexibility in design that it makes possible without disrupting or increasing the cost, thus providing an advantage over other printing processes, hence it would've been further obvious to one of ordinary skill in the art to employ the printing technique of inkjet printing in the Miller et al. process, particular where flexibility in design such as taught in the PCT reference to be desirable for floor materials, as Miller et al. (259) in teaching that the "adhesive can be applied by screen printing, flexographic printing, etc.", essentially suggest that any printing technique is considered applicable, with the PCT reference suggesting situations involving custom-designed or design varied over multiple tiles, where the inkjet technique would be advantageous for patterning techniques, which one of ordinary skill in the art would recognize as applicable to those as taught in Miller et al. that otherwise employ claimed coating sequences.

8. Miller, Jr. et al. (4,504,523) is equivalent to (259) except while teaching use of particles exemplified by silica or other particles, does not explicitly use aluminum oxide in their process, only mention its use in the background. The PCT publication to Hansson et al. (WO 01/47726 A1) is

Art Unit: 1762

equivalent to Miller et al. (259) for the purpose of the rejection, particularly noting abstract; figure; pages 3, 5, 10, 12-13 & example 1 on pages 17-18, where the design applied to the surface to be coated with UV curable acrylic lacquer may be applied via inkjet printing. The patent to Chen et al. (6,228,463 B1; abstract; col. 4, lines 1-15 & 51-68; col. 5, lines 8-col. 6, line 5; col. 13, lines 51-65; start of examples on col. 16)) is equivalent to Miller et al. (259), except it has only "reverse-role coater" or generic teachings for application of the UV curable coatings wear layers, i.e. does not appear to teach either spray or roller coating thereof, just generic application.

The patent to Thompson (4,622,257: figures; abstract; col. 3, lines 20-56) is also of interest for putting nonskid surfaces on floor material using layers and aluminum oxide grit as claimed, but where the substrate is a fiber/cement mixture, rather than plastic.

The copending application 11/453,938 is noted to be of interest for employing a similar series of deposition steps of photosensitive resin with UV curing, but lacks the particle deposition step between the two layers. The Derwent abstract to CN1623681 (Nansheng Plastic IND, Co. LTD) is of interest for being directed to substantially the same process, but is not prior art.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on M-F from about 8:30 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks, can be reached at (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

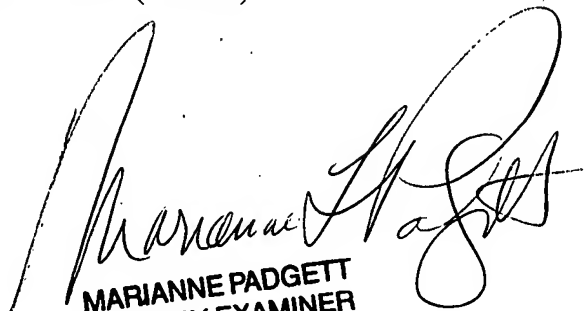
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair->

Art Unit: 1762

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MLP/dictation software

7/6/2007



MARIANNE PADGETT
PRIMARY EXAMINER